Chapter 13

Running

Critical soldier tasks require the ability to move quickly on foot. Running short distances at high speed is essental to moving under direct and indirect fire. Running for longer distances at a constant speed develops the stamina needed to endure sustained operations.

SECTION I – RUNNING

1-1. Running is a vigorous activity that contributes to the overall conditioning of the soldier by developing endurance. Endurance runs a continuum between aerobic and anaerobic systems. Aerobic endurance involves performing low to moderate intensity activities over long periods of time. Anaerobic endurance involves performing high intensity activities for short periods of time. Most of the running currently performed during PRT is aerobic. Aerobic training alone does not fully prepare soldiers for the functional endurance and strength requirements of common soldier physical tasks. **The analysis of the physical demands needed to successfully accomplish critical soldier tasks clearly demonstrates a more significant requirement for anaerobic endurance.**

TRAINING AREA

1-2. Running will be conducted over a variety of terrain:

- hardball (improved and unimproved roads)
- grassy field
- track
- wooded area
- hills
- tank trails

UNIFORM

1-3. The commander specifies the appropriate uniform, based on the type of running activity to be performed. PRT uniforms appropriate for running are listed below:

- BDUs and boots
- fighting load

- PFU
- civilian attire

EQUIPMENT

1-4. Equipment IAW installation policy.

FORMATION

1-5. Formations used in unit running are platoon, company and battalion in column. Other types of running, such as terrain running or 30:90s should be conducted in single or double columns.

LEADERSHIP

1-6. The PRT leader must be able to demonstrate and lead all types of running activities. He must also be familiar with formations, commands, cadence and the use of AIs. When performing unit running, the PRT leader should be to one side of the column or group and toward the rear, in order to have a full view of all the soldiers.

COMMANDS

1-7. Control and calling of cadence is the resposibility of the PRT leader and AIs. The command, "*Double Time*, **MARCH**" is used to begin running. The command, "*Quick Time*, **MARCH**" is used to terminate running (refer to FM 22-5).

SECTION II – RUNNING FORM

1-8. Running is a very fluid, natural act that may be inhibited by over-analysis. However, there are several things runners can do to improve their efficiency without overhauling their natural style. Most runners will find one or two points on which they can improve. Generally, the form and technique for all types of running is fairly constant.

Figure 12-1. Running Form

HEAD

1-9. The head should be held high, with the chin neither pointing up or down. Allowing the head to ride forward puts undue strain on the muscles of the upper back.

SHOULDERS

1-10. The shoulders should assume a neutral posture, neither rounded forward or forcefully arched backward. Rounding the shoulders forward is the most common fault in everyday posture as well as with running. This is usually associated with tightness of the chest and shoulders. Another problem occurs when the shoulder girdle starts to rise with fatigue or increased effort. This position not only wastes energy, but can also adversely affect breathing.

ARMS

1-11. Throughout the arm swing, the elbows should stay at roughly a 90-degree bend. The wrists stay straight and the hands remain loosely cupped. The arm swing should be free of tension, but do not allow the hands to cross the midline of the body.

TRUNK AND PELVIS

1-12. The trunk should remain over its base of support, the pelvis. A common problem with fatigue is allowing the trunk to get in front of the legs and pelvis. This forces the lower back muscles to spend too much energy resisting further trunk collapse to the front.

LEGS

1-13. For distance running, much of the power is generated from below the knee. Energy is wasted as the knees come higher and the large muscles of the hips and thighs are engaged. Practice getting a strong push-off from the ankle of the back leg. This helps to naturally lengthen the stride. Lengthening the stride by reaching forward with the front leg will be counterproductive.

FEET

1-14. The feet should be pointed directly forward while running. With fatigue and certain muscle imbalances, the legs and feet will start to rotate outward. This hinders performance and may create abnormal stresses that cause injury.

SECTION III- TYPES OF RUNNING

ABILITY GROUP RUNS

1-15. Ability group runs are designed to challenge and improve each soldiers overall endurance. This type of running affords soldiers to train in groups of near to equal ability while maintaining intensity and duration within reasonable guidelines to control injury.

1-16. The AGR is conducted in three parts:

- gradual increase during first 1/4 mile
- run at target pace
- gradual decrease during last 1/4 mile

1-17. Soldiers are placed in ability groups based on individual one-mile run times below:

- AGR 1 - 7:59 minutes or less
- AGR 2 - 8:00 to 9:59 minutes
- AGR 3 - 10:00 minutes or greater

1-18. The AGR begins with a gradual increase in intensity for a distance of ¼ mile, continues at a prescribed target pace for a specified time and concludes with a gradual decrease in intensity for a distance of ¼ mile. To ensure that all soldiers receive the desired training effect, AGRs will be conducted at target pace for a minumum of 20 minutes and no longer than 30 minutes. The gradual increase and gradual decrease quarter miles will be conducted at a pace two minutes slower than the target pace.

1-19. Examples of AGRs in the Toughening and Sustaining Phases are described in Figures 13-2 and 13-3.

The prescribed target pace for Toughening Phase AGR 1 is 7:30, AGR 2 is 9:30, and AGR 3 is 10:30 per mile for twenty minutes. The gradual increase and gradual decrease quarter miles will be conducted at the following prescribed pace: AGR 1 is a 9:30 mile or 2:23 per ¼ mile, AGR 2 is a 11:30 mile or 2:53 per ¼ mile, and AGR 3 is a 12:30 mile or 3:08 per ¼ mile.

Toughening Phase AGR				
	Target Pace	First ¼ Mile	Run time/Distance	Last ¼ Mile
AGR 1	7:30	2:23	20 min 2 ½ miles	2:23
AGR 2	9:30	2:53	20 min 2 miles	2:53
AGR 3	10:30	3:08	20 min 1 ¾ miles	3:08

Figure 13-2. Toughening Phase AGR

The prescribed target pace for Sustaining Phase AGR 1 is 7:30, AGR 2 is 9:30, and AGR 3 is 10:30 per mile for thirty minutes. The gradual increase and gradual decrease quarter miles will be conducted at the following prescribed pace AGR 1 is a 9:30 mile or 2:23 per ¼ mile, AGR 2 is a 11:30 mile or 2:53 per ¼ mile and AGR 3 is a 12:30 or 3:08 per ¼ mile.

Sustaining Phase AGR				
	Target Pace	First ¼ Mile	Run time/Distance	Last ¼ Mile
AGR 1	7:30	2:23	30 min 3 ¾ miles	2:23
AGR 2	9:30	2:53	30 min 3 miles	2:53
AGR 3	10:30	3:08	30 min 2 ¾ miles	3:08

Figure 13-3. Sustaining Phase AGR

TERRAIN RUNS

1-20. Terrain runs apply the "Train as You Fight" principle to PRT. Running through local training areas, over hills and around obstacles improves mobility, endurance and the ability to stop, start and rapidly change direction. Terrain runs are designed to be conducted with small unit integrity. This type of running is best performed by squads and sections.

Distances should generally be 1 to 2 miles; at an intensity relative to the terrain. Small unit leaders will form the unit in single file and maintain an interval suitable for the terrain and environmental conditions. Soldiers in the toughening phase should perform terrain runs in BDUs and well-fitting boots. Soldiers in the sustaining phase should perform terrain runs under fighting load.

HILL RUNNING

1-21. Hill running is an effective means of developing explosive leg strength and anaerobic endurance. Hill running is designed to be conducted with small unit integrity. This type of running is best performed by squads and sections. The intensity and duration of the repetitions will depend on the characteristics of the hill. A short steep hill is ideal for explosive efforts. Long, gentle slopes are best for sustained efforts of moderate intensity. It is important to maintain good form during hill repeats. Do not lean excessively forward. On steep hills, the knees will need to rise higher than normal to permit a full stride. As with other forms of intense running, start with just a few repetitions and add one or two on subsequent sessions.

SPEED WORK

1-22. **Speed work** is based on the premise that a greater amount of intense work can be performed if the work is interspersed with periods of rest. This has readiness implications, since improvements in physical readiness are affected to a greater extent by the intensity of training than by the frequency or duration of the training. During speed work, soldiers perform a work interval in a specified time for a specific number of repetitions. The work intervals are followed immediately by an active rest interval. Multiple work intervals cause the onset of fatigue many times during a single training session. Speed work improves the resistance to fatigue of the active muscles by repeatedly exposing them to high intesity activities. As a result of their increased anaerobic and aerobic endurance, soldiers will be able to sustain performance of physically demanding tasks at a higher intensity for a longer duration. The training stimulus associated with performing this type of training occurs from the combination of work and rest. A very short recovery period may not allow the body to recover sufficiently to perform the next work interval at the desired intensity. A very long recovery period may allow the body to recover too much and some of the training effect would be lost. Generally, duration of the recovery period depends on the duration of the work interval. An approprate work to rest ratio for improving soldier readiness is 1:3. **The intensity of exercise contributes more toward the improvement of physical readiness than does the duration.** This specific improvement applies to the soldiers' ability to perform critical tasks such as: move under direct fire, transport a casualty, or move in or around obstacles. Speed work has three variables: work duration, rest duration and number of repetitions. The speed work activites appropriate for soldiers to improve physical readiness are 30:90s or 60:180s in the toughening phase and 30:60s or 60:120s in the sustaining phase.

30:90S/60:180S

1-23. Soldiers in the toughening phase will perform 30:90s or 60:180s, adhering to a work to rest ratio of 1:3. During the work phase of 30:90s, soldiers will run at a percieved 80% effort for 30 seconds followed by walking/jogging for a period of 90 seconds. This sequence is repeated for 5 repetitions, progressing to 10 repetitions. When performing 60:180s, soldiers will run for 60 seconds and walk/jog for a 180 seconds active-rest interval. Soldiers begin with 30:90s before progressing to 60:180s. When soldiers possess the ability to perform 10 repetitions of 30:90s and 60:180s, separately, they may combine the use of both in a single PRT activity (i.e. 5 repetitions of 30:90s and 5 repetitions of 60:180s).

30:60S/60:120S

1-24. Soldiers in the sustaining phase will perform 30:60s or 60:120s, adhering to a work to rest ratio of 1:2. As in the toughning phase, begin with 5 repetitions, gradually progressing to 10 repetitions. When soldiers possess the ability to perform 10 repetitions of 30:60s and 60:120s, separately, they may combine the use of both in a single PRT activity (i.e. 5 repetitions of 30:60s and 5 repetitions of 60:120s).

UNIT RUNS

1-25. This is running of a general nature and should be based on a distance that can be achieved with unit integity and a display of unit cohesion within thirty minutes. Unit runs are organized by platoon, company, battalion, etc.; not by ability. Keeping a large unit in step, with proper distance intervals, and correct running form offers intangible benefits that commanders desire. They provide a snapshot of the discipline, motivation, and endurance of the unit. **Commanders should not use unit runs as the foundation of their PRT program.** The unit run begins with a gradual increase in intensity for the first ¼ mile, continues at a prescribed target pace for a specified time and concludes with a gradual decrease in intensity for the last ¼ mile. The gradual increase and gradual decrease quarter miles will be conducted at a pace two minutes slower than the target pace. To ensure that all soldiers receive the desired training effect, unit runs will be conducted at target pace for 20 minutes in the toughening phase and for 30 minutes in the sustaining phase. The unit commander is responsible for establishing a pace achievable by all soldiers in the unit regardless of their phase of training.

SECTION IV- SUMMARY

1-26. Fatigue can affect soldier task performance as strength and endurance are decreased. Reaction time is prolonged, agility and coordination are reduced and whole body movement is slowed. With a decline in concentration and alertness, the soldier can become careless, increasing the risk of injury. To ensure the physical readiness of their soldiers, commanders and PRT leaders must conduct running activities that develop the type of endurance demanded of their mission.